

REFRIGERATOR AND CONTROL METHOD THEREOF

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of Korean Patent Application No. 10-2015-0108015, filed on Jul. 30, 2015 in the Korean Intellectual Property Office, the disclosure of which is incorporated herein by reference.

BACKGROUND

[0002] 1. Field

[0003] Embodiments of the present disclosure relate to a refrigerator capable of storing food including fermented liquor, and a method of controlling the refrigerator.

[0004] 2. Description of the Related Art

[0005] In general, a refrigerator is a home appliance including a storage space for storing food and a cool air supply unit for supplying cool air to the storage space to keep the food fresh.

[0006] Lately, refrigerators for specific food are being introduced. Examples of the refrigerators for specific food include a fermentation refrigerator for storing fermented food in optimum state, and a wine refrigerator for storing wine in optimum state.

[0007] Particularly, since fermented liquor such as wine is rancidified from when the cap opens so that the fermented liquor is exposed to the air, studies into a refrigerator capable of preventing such rancidity are actively conducted.

SUMMARY

[0008] Therefore, it is an aspect of the present disclosure to provide a refrigerator of sensing a degree of rancidity of fermented liquor to transmit state information of the fermented liquor to a remote user, and a method of controlling the refrigerator.

[0009] Additional aspects of the disclosure will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the disclosure.

[0010] In accordance with one aspect of the present disclosure, a refrigerator includes a storage space configured to store fermented liquor; a cooling unit configured to cool inside air of the storage space; a rancidity sensor configured to sense a degree of rancidity of the fermented liquor; and a communication unit configured to transmit state information of the fermented liquor created based on the degree of rancidity to a predetermined external device.

[0011] The rancidity sensor may sense the degree of rancidity of the fermented liquor using the fermented liquor in a gaseous state.

[0012] The rancidity sensor may sense the degree of rancidity of the fermented liquor, based on mass of the fermented liquor in the gaseous state absorbed on a plurality of different polymers.

[0013] The refrigerator may further include a controller configured to create the state information of the fermented liquor based on the degree of rancidity of the fermented liquor.

[0014] The controller may create the state information of the fermented liquor, including at least one of a rancidity degree percentage, an expected date of rancidity, and a

recommended drinkable period of the fermented liquor, based on the degree of rancidity of the fermented liquor.

[0015] If a present date falls within a predetermined time period before the expected date of rancidity or if the present date passes the recommended drinkable period, the controller may control the communication unit to transmit a rancidity warning message to the external device.

[0016] The controller may control the communication unit to transmit a rancidity warning message including rancidity delay temperature for inside air of the storage space to the external device.

[0017] The storage space may include a first storage space whose inside air is cooled to first temperature by the cooling unit; and a second storage space whose inside air is cooled to second temperature by the cooling unit, wherein the second temperature is lower than the first temperature, wherein the controller controls the communication unit to transmit a rancidity warning message including a position movement guide message for guiding a user to move the fermented liquor to the second storage space, to the external device.

[0018] If a present date falls within a predetermined time period before the expected date of rancidity or if the present date passes the recommended drinkable period, the controller may control the cooling unit to cool inside air of the storage space to predetermined rancidity delay temperature.

[0019] If the controller receives a control command for cooling the inside air of the storage space to the rancidity delay temperature from the external device when the present date falls within the predetermined time period before the expected date of rancidity or when the present date passes the recommended drinkable period, the controller may control the cooling unit according to the control command.

[0020] If the controller receives a control command for deciding a target date of rancidity from the external device when the present date falls within the predetermined time period before the expected date of rancidity or when the present date passes the recommended drinkable period, the controller may control the cooling unit to cool the inside air of the storage space to rancidity delay temperature decided according to the target date of rancidity.

[0021] The refrigerator may further include a cap opener configured to draw a cap inserted into an opening of a container in which the fermented liquor is contained, wherein the rancidity sensor is disposed in the inside of the cap opener.

[0022] The cap opener may include a guide part configured to guide the cap inserted into the opening of the container to the inside of the cap opener; and an uncapping part configured to draw the cap entered the inside of the cap opener along the guide part out of the opening, wherein the rancidity sensor is disposed to face the opening of the container when the cap is drawn out of the opening.

[0023] In accordance with another aspect of the present disclosure, a method of controlling a refrigerator, the refrigerator including a storage space to store fermented liquor, the method includes sensing a degree of rancidity of the fermented liquor; creating state information of the fermented liquor based on the degree of rancidity; and transmitting the state information of the fermented liquor to a predetermined external device.